

## CLAIMS

1. A protein of the following (a) or (b):
  - (a) a protein comprising an amino acid sequence represented by SEQ ID NO: 1;
  - (b) a protein comprising an amino acid sequence derived from the amino acid sequence of SEQ ID NO: 1 by deletion, substitution, addition or insertion of one or several amino acid residues, and having GDP-4-keto-6-deoxy-D-mannose-3, 5-epimerase-4-reductase activity.
2. DNA encoding a protein of the following (a) or (b):
  - (a) a protein comprising an amino acid sequence represented by SEQ ID NO: 1;
  - (b) a protein comprising an amino acid sequence derived from the amino acid sequence of SEQ ID NO: 1 by deletion, substitution, addition or insertion of one or several amino acid residues, and having GDP-4-keto-6-deoxy-D-mannose-3, 5-epimerase-4-reductase activity.
3. The DNA of claim 2 which comprises a nucleotide sequence represented by SEQ ID NO: 2.
4. An expression vector which comprises the DNA of claim 2 or 3.
5. A transformant which is transformed with the expression vector of claim 4.
6. A process for producing GDP-4-keto-6-deoxy-D-mannose-3, 5-epimerase-4-reductase, which comprises culturing the transformant of claim 5 in a medium and collecting GDP-4-keto-6-deoxy-D-mannose-3, 5-epimerase-4-reductase from the obtained culture.
7. A transformant which is transformed with the expression vector of claim 4 and an expression vector comprising DNA encoding GDP-D-mannose-4, 6-dehydratase.
8. A process for converting GDP-D-mannose into GDP-L-fucose using the transformant of claim 7.
9. A process for producing GDP-L-fucose which comprises culturing the transformant of claim 7 together with GDP-D-mannose in a medium, and collecting GDP-L-fucose from the obtained culture.